ICG Illinois, L.L.C
Viper Mine

National Pollutant Discharge Elimination System (NPDES) Permit

Responsiveness Summary

Regarding

November 16, 2016 Public Hearing

Illinois Environmental Protection Agency
Office of Community Relations
March 30, 2017

Viper Mine

National Pollutant Discharge Elimination System (NPDES) Permit

Responsiveness Summary

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ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

ICG Illinois, L.L.C.
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ILLINOIS EPA PERMIT DECISION

On March 30, 2017, the Illinois Environmental Protection Agency approved a renewed NPDES permit for ICG Illinois, L.L.C., Viper Mine.

The draft NPDES permit was public noticed on September 30, 2016 and placed on the Illinois EPA website at:

http://external.epa.illinois.gov/PublicNoticeService/api/Notices/GetDocument/965

The following changes have been made to the draft permit since it was placed on public notice on September 30, 2016:

Outfall 011 (to an unnamed tributary to Elkhart Slough) and all references to this outfall have been removed from the permit.

PRE-HEARING PUBLIC OUTREACH

The notice of the draft NPDES permit and notice of public hearing was published in the *State Journal Register* on September 30, October 7, and 14, 2016.

The hearing notice was mailed or e-mailed to:

- Logan County officials, municipal officials (in Elkhart), state and federal elected officials;
- Illinois Chapter of the Sierra Club, Environmental Law and Policy Center, and Prairie Rivers Network; and,
- Those who have requested to be notified of Bureau of Water hearings.

The hearing notice was posted on the Illinois EPA website on September 30, 2016:
http://external.epa.illinois.gov/PublicNoticeService/api/Notices/GetDocument/968

Hearing notices were posted at Illinois EPA offices.

NOVEMBER 16, 2016 PUBLIC HEARING

Acting Hearing Officer Brad Frost opened the hearing on November 16, 2016, shortly after 6:00 p.m. at Elkhart Christian Church Fellowship & Community Center, 206 South Gillett Street, Elkhart, Illinois.

Illinois EPA Hearing Participants:

Brad Frost, Acting Hearing Officer, Office of Community Relations
Dora Maschoff, Permit Section, Marion Regional Office, Bureau of Water
Bob Mosher, Standards Section, Division of Water Pollution Control, Bureau of Water
Lynn Dunaway, Groundwater Section, Bureau of Water
Stefanie Diers, Division of Legal Council

Comments and questions were received from the audience.

Acting Hearing Officer Brad Frost closed the hearing at 7:40 pm on November 16, 2016.

Illinois EPA personnel were available before and during the hearing to meet with elected officials, news media and concerned citizens.

Approximately 30 persons representing neighbors, businesses, environmental groups, and interested citizens participated in or attended the hearing. A court reporter prepared a transcript of the public hearing which was posted November 29, 2016 on the Illinois EPA website at:
http://external.epa.illinois.gov/PublicNoticeService/api/Notices/GetDocument/1028

The hearing record remained open through December 16, 2016.

BACKGROUND OF VIPER MINE

The Illinois EPA Bureau of Water prepared a draft renewed National Pollutant Discharge Elimination System (NPDES) permit with modifications for ICG Illinois, L.L.C., whose address is 5945 Lester Road, Elkhart, IL 62693.

Illinois EPA held this hearing for the purpose of receiving comments on the draft permit prior to taking final action on the permit application. Issues relevant to this proceeding include the applicant's compliance with the permitting requirements of the federal Clean Water Act and Subtitle C 35 Illinois Adm. Code.

The applicant operates surface facilities for an underground coal mine (SIC 1222). Mine operations result in the discharge of wastewater classified as alkaline mine drainage.

Comments were invited on the entire draft permit which includes the following modifications:

1. The addition of 282 acres, identified in the Illinois Department of Natural Resources, Office of Mines and Minerals, Permit No. 438, the area for the new North Coal Refuse Slurry Impoundment;

2. The addition of two additional discharge points from two additional sediment ponds:
   West Sediment Pond with designated Outfall 012, and
   Northeast Sediment Pond with designated Outfall 013;

3. Incorporation of additional groundwater monitoring wells (DW-2, DW-3, DW-4R, DW-5, DW-6, DW-7, DW-8, DW-9, DW-10, DW-11, DW-12, DW-13, DW-14, DW-15, DW-16, MW-121k, MW-122k, MW-123k, MW-124k, MW-124, MW-125k and DW-5k); and,

4. Various updates to the Operation plan were incorporated into this NPDES permit.

Responses to Comments, Questions and Concerns

Comments, Questions and Concerns in regular text
Agency responses in bold text

NPDES Permit

1. The IDNR has identified 68 modifications to the proposed Viper Mine Permit 438 and revisions to Permit Number 3. These revisions make a difference to the NPDES permit. Why is the Illinois EPA working on this NPDES if there are still issues that need to be addressed with OMM?

   Following the Illinois EPA's review of the initial joint OMM/IEPA permit application, several modifications were made based on both IEPA and IDNR's Office of Mines and Minerals (OMM) questions and comments. The Illinois EPA and the OMM permit review processes do not precede along the same timeline. A draft NPDES permit for the proposed facility is based on the information provided in the initial joint application and modifications made to the application based on the Illinois EPA review and comments. All current and pertinent information and maps were considered by the Illinois EPA in preparing the draft NPDES permit for this facility.

   The Office of Mines and Minerals (OMM) issued the Viper Mine Permit No. 438 and Revisions to Permit No. 3 on February 9, 2017.

2. How does the mine or the Illinois EPA know when the mine is not in the parameters of the permit?

   Mining facilities are inspected by both Illinois EPA and IDNR/Office of Mines and Minerals. OMM inspects the coal mining facilities operations on a monthly schedule. The Illinois EPA sets a minimum goal of inspecting mines every three (3) years with the possibility of more frequent inspections. The inspections will conclude if the mine is operating within the parameters of the permit.

3. Does the NPDES permit consider the possibility of catastrophic failure of the impoundment caused by subsidence and the potential impacts to surface and groundwater?

   No, further mining is planned beneath the North Coal Refuse Slurry impoundment site. All impoundments included in the NPDES permit area for Viper Mine have been reviewed by the Illinois EPA. The Illinois EPA has determined that those impoundments will not violate

the Environmental Protection Act or regulations adopted under the Act.

4. When did the mine start bringing ash in?

   The mine started bringing ash to the site in 1988.

5. Does the USEPA need to be notified about potential contamination?

   The USEPA authorizes the Illinois EPA to administer the NPDES permits within the state of Illinois. The USEPA's sole source aquifer (SSA) program does not review projects funded only by private entities. The SSA does however recommend federal, State and local partnerships as the best way to protect groundwater resources. The protective requirements included in this permit, which are discussed in greater detail in this Responsiveness Summary, represent one such partnership.

6. Would the variances lead to a greater risk of water contaminants infiltrating areas outside the mine permit from ditch overflow such as, heavy rains, weather or some other situation?

   The creation of sedimentation ponds at the mine slows water runoff from storm events. Some of the water from the storm events is retained in the pond, thereby reducing the amount that flows downstream. The effect of the ponds is to reduce the downstream impact of storm runoff events, not to exacerbate them.

   Design storms or precipitation events utilized by the Illinois EPA for various structures such as sedimentation basin and basin discharge structures located at the surface facilities of an underground mine operation are specified in the IDNR/OMM regulations under 62 Ill. Adm. Code 1817.

   It is the responsibility of Illinois EPA to ensure protection of the receiving streams. The final permit requires all discharges from this facility to meet applicable water quality standards during any storm event.

7. If there is a drawdown of the coal slurry impoundment, will discharge be sent out to these points?

Effluent at each outfall would be regulated with limits set at the water quality standard, or lower, for mine-related pollutants. Water quality standards are developed to be protective of aquatic life and human health. Given the water standards are applicable at each outfall; there should be no concern in the quality of water discharged.

8. Was there an actual cost analysis on what would happen if the public water supply was contaminated, if the ground water wells were put out of service or if there was contamination downstream to the point there was compromising issues with either the water in Lincoln, Illinois or the aquifers in this area?

There was no cost analysis for the contamination of water supplies. All coal mining operations are required by IDNR/OMM to post a surety bond to insure that sufficient funds are in place to cover reclamation and/or remediation activities in the event of insolvency.

9. What provisions are being put in place to prevent rainwater from penetrating the final soil cap and eventually causing toxic leachate from contaminating surface and groundwater?

The applicant has proposed the use of two feet of clay material compacted to a hydraulic conductivity of $1x10^{-7}$ centimeters per second, beneath a protective soil cover with vegetation. The applicant has modeled evapotranspiration, slope and resistance to flow from the compacted clay to limit infiltration to a quantity lower than will be allowed to exit by the bottom liner. Therefore, post closure monitoring would not be useful, due to the absence of leachate to monitor. If there is a surface discharge from the internal drains, an NPDES permit would be required, with applicable water quality standards.

10. The Elkhart Slough runs right through middle of Elkhart. Half of the town is on one side of it and half is on the other. Has the NPDES permit application indicated why the mine would send surface water runoff full of heavy metals into a residential area?

All NPDES limitations have been established based on the more restrictive of either water quality standards of 35 Ill. Adm. Code 302.208 or the technology based effluent limitations of 35 Ill. Adm. Code 406.106. By establishing the permit limits in this manner, the permit insures that the water quality standards in the receiving

streams will be met and therefore protective of the receiving stream water quality for downstream users.

11. What is the reasoning behind the idea proposing to build an Outfall to Elkhart Slough? Has this ever been done before?

    The Illinois EPA contacted the Permittee regarding the need for the reference outfall, Outfall No. 011. After the Illinois EPA's discussion with the Permittee, they indicated that they would not construct the outfall and requested that this outfall be removed from the permit. Therefore, Outfall No. 011 has been removed from the NPDES permit and the Permittee is not authorized to discharge to the unnamed tributary to Elkhart Slough.

12. Can you define what an Outfall is?

    According to the US Environmental Protection Agency the definition of an Outfall is the place where effluent is discharged into receiving waters.

13. Are you aware of any other mine asking for a permit to send wastewater into a town?

    See response to #11.

14. Has the Illinois EPA written a new NPDES or is the mine and Agency using the original old one for Number 3 or just revisiting it?

    The final NPDES permit will be a renewal and modification of the current NPDES permit for Viper Mine.

15. Did the Illinois EPA look at the sources of coal ash for this facility?

    Yes, an analysis of a representative sample of the waste material from the individual Coal Combustion Waste (CCW) source is required for the initial approval for disposal. The representative weighted composite sample analysis is to include only CCW material from the sources being disposed. This fulfills the requirements of Provision No. 3 of Section 21(r)(3) of the Act and the Land Reclamation Division Memorandum 92-11 with respect to waste material analysis and characterization. The Land Reclamation Division Memorandum No. 92-11 is a joint memorandum issued by Illinois Department of Natural Resources, Office of Mines and Minerals (OMM), Land Reclamation

Division and the Illinois EPA. The intent of this memorandum was to summarize the OMM/IEPA permitting requirements for the disposal of coal combustion waste at coal mine facilities as generally outlined in Section 21(r) of the Illinois Environmental Protection Act. The IEPA utilizes Memorandum 92-11 to supplement the requirements of Section 21(r)(3) of the Act with respect to material characterization and disposal site information. More specifically, a Toxicity Characteristic Leaching Procedure (TCLP) analysis for characterization of the coal combustion waste material is required in accordance with Memorandum 92-11 due to no testing method being specified in Section 21(r)(3) of the Act. This memorandum also insures consistency in the information required by both IEPA and IDNR/OMM in the permitting of coal combustion waste disposal activities at coal mine facilities.

16. Has appropriate and updated modeling for the new impoundment been requested by the Illinois EPA to ensure the health and welfare of the Village of Elkhart?

The impoundment has been designed in accordance with Mine Safety and Health Administration (MSHA) regulations to safely impound the combination of fine coal and water (slurry).

17. Is the new RDA a "new source" and if not, what reasons were given for not considering it a "new source"?

Yes, the new RDA was considered a "new Source" and subject to an anti-degradation assessment. This assessment must contain the required information as outlined in the antidegradation standard of 35 Ill. Adm. Code 302.105(f). The antidegradation investigates how the mine's proposed activity can minimize pollutant loading or aquatic habitat impacts to the greatest practical extent. The Illinois EPA then must review the information to determine whether the provisions of the antidegradation standard have been met.

18. Has the Illinois EPA done a complete check to ensure no financial assistance is provided to Viper Mine and therefore requiring a NEPA review?

Yes, the Illinois EPA has inquired into whether or not financial assistance has been provided to Viper Mine pursuant to 42 USC 4321. Viper Mine is not receiving financial assistance. Therefore, a NEPA is not required.

19. Has Illinois EPA looked into the impacts this mine will have on the Pearl Aquifer?

The Illinois EPA does not believe the proposed disposal area will have an impact on the Pearl Aquifer due to the use of a 60 mil synthetic liner and an underdrain system above the liner that will limit the amount of hydraulic head on the liner system. Further, there is a groundwater monitoring system so that if a leak did occur, there would be early warning of the release.

20. Where will the water go from the discharge points 012 and 013? If there is a drawdown will it go to these outfalls?

Illinois water quality standards are established to protect the integrity of streams and rivers throughout the state. Routing site drainage through sedimentation basins coupled with the discharge limitations placed in the NPDES permit will ensure that this drainage is in compliance with water quality standards. Outfalls 012 and 013 will discharge to different unnamed tributaries to Lake Fork (tributary to segment EIG-01). Outfall 012 will treat the storm runoff from the west berms of the new slurry pond and a subsoil stockpile. Outfall 013 will treat the remainder of the runoff from the slurry pond and a topsoil stockpile.

21. Where else has the IEPA approved toxic coal refuse and CCW impoundments near a community public water supply well?

See response to #37.

22. Is there a way to assess the amount of water expected to leak from this RDA and the adjacent slurry pond system?

The facility is required to use a 60 mil synthetic liner under the RDA and slurry pond system therefore leakage is not anticipated. Further there is a groundwater monitoring system so that if a leak did occur, there would be early warning of the release.

23. Has Illinois EPA met with Elkhart village officials about contingency plans in the event the Elkhart public water supply wells are compromised?

No, the Illinois EPA has not met with the Elkhart village officials about contingency plans. The Applicant was required to submit their contingency plan to the IEPA.

24. Can you explain the DMR reporting for the last five years of the mine?

The discharge monitoring and reporting requirements contained in the permit were established in accordance with 35 Ill. Adm. Code 406.102. The frequency of the monitoring and reporting currently being required is considered adequate to reflect discharge concentrations of both base flow and storm water discharges overall operating conditions.

Discharge Monitoring Reports (DMR's) are required to be submitted quarterly in accordance with Special Conditions 3 and 4 of the NPDES permit. These discharge monitoring reports summarize the results of the monitoring that is required under this NPDES permit.

The Illinois EPA has reviewed the past five years of DMR's and the company reported one exceedance in December of 2013 for sulfate.

25. Has the Illinois EPA received accurate reports of discharges, including discharges during high rains? Have these reports been validated?

The facility must report discharges on their discharge monitoring reports as specified in their NPDES permit. The mine is responsible for the collection and analysis of effluent samples as directed by the NPDES permit. Mines are required to use a laboratory that follows USEPA regulations for laboratory analysis found at 40 CFR 136. The lab results are returned to the mine and mine personnel forward the data to the Illinois EPA periodically in DMRs (Discharge Monitoring Reports). DMR data is uploaded into the USEPA ICIS (Integrated Compliance Information System) and from there the data is evaluated for compliance with permit limits.

The implementation of e-DMR and ICIS database system, monitoring or evaluation of the DMR data is automated. Therefore issues such as late submittals, excursions, violations, etc., are automatically flagged or identified by the system for further evaluation by Illinois EPA personnel for further action if warranted and appropriate.

26. Does the Illinois EPA review the analysis submitted concerning coal ash?

Provision No. 3 of Memorandum 92-11 requires that an analysis be performed to characterize the CCW material. A TCLP leachate analysis was provided for each of the sources approved for disposal under the NPDES permit. The results of the TCLP analysis were evaluated by the Illinois EPA. It is noted that, in general, since the TCLP analysis is an acid leachate test, the results are considered to be a "worse-case" scenario because the CCW material will be maintained in an alkaline environment. Therefore, for most constituents the TCLP analysis will provide an overstatement of actual leached concentrations to be expected or experienced.

27. Has appropriate and updated modeling for the new impoundment been requested by the Illinois EPA?

The impoundment has been designed in accordance with Mine Safety and Health Administration (MSHA) regulations to safely impound the combination of fine coal and water (slurry).

Antidegradation Assessment/Water Quality Standards

28. How will this permit prevent additional discharges into the unnamed tributaries that feed Lake Fork Creek?

This mine reuses water consistently and there seldom is a discharge to surface waters. Through water conservation, this facility prevents pollutants, which might be in the water, from getting in the receiving streams. The facility plans to continue to operate the mine in this manner. If the facility does have a discharge, then they must meet the permit limits. Those permit limits are set so that water quality standards will be met in the ditches that they discharge into; therefore, these discharges will not cause Lake Fork Creek to exceed the water quality standards.

29. Outfall A01 is from the restrooms facility at the mine and the permit says that it goes to Pond 001, which empties in the tributary to Lake Fork Creek. Lake Fork Creek is listed by the Illinois EPA as impaired due to fecal coliform, yet the draft permit puts no limits on the fecal coliform. Why is there no disinfection required by the coal mine?

Disinfection is only required for sanitary wastewater. The sanitary wastewater is discharged through Outfall A01, which then flows into Pond 001 and is discharged through Outfall 001. The large amount of dilution available in Pond 001 will dilute the sanitary wastewater to below the fecal coliform water quality standard of 200 colonies/100 mL before being discharged. Additionally, the sunlight will destroy the fecal coliform when it is in the pond. Based on the dilution available and the destruction of fecal coliform in Pond 001, the Illinois EPA issued a year-round disinfection exemption for Outfall 001A. Based on the above information, the Illinois EPA expects that the fecal coliform water quality standard will be met when the effluent is discharged through Outfall 001.

30. Has the Illinois EPA done the required analysis pursuant to 40 CFR 136 for pH, temperature, residual chlorine, oil and grease, fecal coliform, enterococci and volatile organics?

The Illinois EPA did not do any of the analysis for pH, temperature, residual chlorine, oil and grease, fecal coliform, enterococci, or volatile organics. These were performed by the permittee. The permittee is required by the NPDES permit to monitor using test procedures approved under 40 CFR Part 136.

31. Lake Fork Creek, which receives runoff from the property the mine is requesting to use for a fly ash slurry impoundment site, is targeted as a major priority greenway. The proposed Viper Mine impoundment is located in proximity to the headwaters of Lake Fork Creek and its associated wetlands. Over 14 acres of the site are designated as “Farmed Wetlands.” The wetlands aspect of this site should be given a full review by the Illinois EPA and the Army Corp of Engineers with attention given to the 2014/2015 changes to the Clean Water Act. The 2014 amendments to the Clean Water Act include protection for wetlands and upstream tributaries from contaminants.

On January 8, 2015, the Army Corps of Engineers issued a letter that stated that the project impacting Wetlands 1-5, totaling 14.93 acres of PEM (palustrine emergent) wetlands did not require a Department of the Army (DA) Section 404 permit. It was determined that Wetlands 1-5 are considered isolated wetlands, with no direct surface or subsurface connection to waters of the United States.

32. Have the figures provided to Illinois EPA regarding full-time jobs for local residents, annual payroll and increased taxes to Logan County been verified and validated?

There was a typographical error on the part of Illinois EPA: the taxes to Logan County were written as approximately $539,000 annually and what was reported to the Illinois EPA was approximately $529,000 annually. The full-time jobs for local residents, annual payroll, and increased taxes to Logan County are from Viper Mine's financial statements.

Groundwater Issues

33. What are the potential impacts to the groundwater in cross-contamination with the surface water from placing a coal waste impoundment over such a large area with such a high groundwater level?

The Illinois EPA believes that the potential for surface water to impact groundwater is minimal, because the NPDES permit requires that all ditches and sedimentation ponds conveying contact wastewater to be lined.

34. What would keep the groundwater, which can travel in unexpected directions, from evading monitoring wells?

While unidentified anomalies in the subsurface can make groundwater flow deviate from what was anticipated in specific areas, groundwater will always flow from an area of greater hydraulic head to areas of lower hydraulic head, and will always flow more quickly in more permeable formations under the same gradient. Given these principles, the Illinois EPA has required the applicant to install a monitoring well network, which includes a sufficient number of wells, in the areas that are expected to intercept any contaminants released from the proposed disposal area.

35. Has modeling has been done to gauge the potential rate of migration and potential effects of different magnitude of releases of contaminated liquid into the groundwater? Is it normal that the Illinois EPA would not do modeling?

The Illinois EPA does not believe that modeling is necessary due to the protective measures being employed. The applicant has proposed the use of a 60 mil synthetic liner to prevent leachate migration. There will be an underdrain system above the liner that will limit the amount of hydraulic head on the liner system, further reducing the potential for leachate migration. There is a groundwater monitoring system so that if a leak did occur, there would be early warning of the release.

36. What provisions does the NPDES permit make for the long-term protection of the Elkhart public water well?

The NPDES permit requires liners in the disposal area, sedimentation basins and connecting ditches. The disposal area has an internal drainage system to reduce hydraulic head on the liner system, to reduce the potential for leakage. There is a monitoring well system to detect contaminants near the source in the event that a leak does occur.

37. Where else does the Illinois EPA approve or deal with toxic coal refuse and coal ash impoundments near a public water well or a public water supply?

The Illinois EPA searched for other active public wells and public water supplies located approximately the same distance from active waste disposal areas as the Elkhart community well. The Illinois EPA found two other communities with wells near surface mines, a third community with a reservoir and public water supply intake nearby and a fourth community with wells near a permitted disposal area that has not been constructed.

38. Why does the Illinois EPA believe the liner is protective?

High density polyethylene (HDPE) liners have been effectively used for many years for landfills and other types of surface impoundments, including coal waste impoundments.

39. What is the liability of the mine if it does leak and were to pollute the aquifer?

The Illinois Environmental Protection Act (Act) and 35 Ill. Adm. Code Part 620 both prohibit groundwater contamination. Any party found

responsible for such contamination is required to perform remediation of groundwater as required by regulation.

40. If there was a leak, where would the clean water come from?

In addition to the remedial actions required by the Act and Part 620, the Surface Mining Control and Reclamation Act (SMCRA), administered by IDNR, requires that a mine operator who causes diminution of the quality or quantity of a water supply must provide a water supply of equal or greater quantity and quality. Such a supply could for example be from wells drilled in uncontaminated areas or connection to another water supply.

41. Is there any statute or rule that addresses what happens if the aquifer is polluted?

See response to #39.

42. Can you address the wellhead protection and source water quality issues?

The State's Source Water Protection Program has been implemented at Elkhart's wells. Wellhead protection consists of delineation, source identification, source management vulnerability assessment and contingency planning. The Village has completed these activities and has an approved source water protection plan. The Illinois EPA has reviewed data from Elkhart's well which is located adjacent to the mine. The Illinois EPA found that arsenic is elevated above the groundwater standard occasionally. However, elevated concentrations of arsenic are common in the Mahomet Aquifer. The Illinois EPA believes the arsenic in Elkhart's well results from natural mineralization within the aquifer. The Illinois EPA further notes the absence of elevated concentrations of common mine related contaminants such as sulfate, chloride and total dissolved solids, indicating no impact from the mining activities and an acceptable source water quality.

43. If the liner does leak and the aquifer is polluted, what is the liability of the mine?

See responses to #39 and #40.

44. Will this facility be mining from the Pearl Aquifer?

If the mine's operation causes diminution of any water supply in quantity or quality, as described in Response #39, the mine is responsible for replacing that water source.

45. Did the Illinois EPA study the contaminants in the monitoring wells?

Yes the Illinois EPA has reviewed the analytical results from the monitoring wells. The Illinois EPA found that some of the monitoring wells have elevated concentrations of chloride, sulfate and total dissolved solids which is indicative contaminants from mining activities. The Illinois EPA also found that some monitoring wells have elevated concentrations of metals. There is not a correlation between the highest concentrations of mine indicator constituents and the highest concentrations of metals. Therefore, the Illinois EPA believes the metals concentrations are primarily naturally occurring, since they occur at the highest concentrations without correlation to sulfate, chloride and total dissolved solids concentrations.

46. Who is in charge of protecting the Mahomet Aquifer? And have they been notified there is a potential for contamination?

The Illinois EPA is responsible for protecting the Mahomet Aquifer, in the same manner it protects the other water resources of the State, through application of provisions of the Act and Part 620. The Illinois EPA has reviewed the preventive measures proposed by the applicant and has concluded that the potential for contamination from the proposed impoundment is not significant.

47. Our well is 50 feet deep. The water level is 18 feet deep. What is going to keep the heavy metals and the contaminants from reaching 18 feet down?

The applicant has proposed the use of a 60 mil HDPE liner to prevent migration out of the disposal area. In addition, an internal drain system above the liner will reduce hydraulic head on the liner further limiting the possibility of a release. At reclamation the applicant has proposed the use of two feet of clay material compacted to a hydraulic conductivity of $1x10^{-7}$ centimeters per second, beneath a protective soil cover with vegetation. The low permeability clay in conjunction with the slope and evapotranspiration will greatly limit infiltration. Beginning before construction and continuing for the entire life-cycle of the disposal area, a groundwater monitoring system will be monitored quarterly to assure that the liner continues

to function properly. These systems will protect the well and the groundwater in general.

48. How can you have Class IV groundwater on an imaginary line right next to Class I groundwater? How will the IEPA justify drawing an imaginary line of demarcation between Class IV and Class I groundwater standards used by the public water supply for the Village of Elkhart should contamination occur?

The line between Class IV and Class I groundwater in this case is the mine permit boundary, which represents real world differences. Within some portions of Permit 3, mining activities were already occurring prior to the adoption of SMCRA, those activities cannot be reversed. Further, within the permit boundary, the mine has control over the use of, and exposure to, any contaminants that may be in the groundwater. Part 620 recognizes these facts. Therefore, within these specified portions of Permit 3 the numerical groundwater quality standards of Part 620 are not applicable. However, Part 620 also recognizes the fact that groundwater is not a stationary resource. Therefore, the permit boundary also represents a point of compliance, beyond which the numerical groundwater standards of Part 620 do apply. To summarize, within the permit boundary the numerical Part 620 standards are not applicable, beyond the permit boundary the numerical Part 620 standards do apply. An exceedance of Part 620 numerical standards beyond the permit boundary would require some type of remedial action.

49. What studies and analysis has been done regarding the liner so as to protect the health and safety of Elkhart? (subsidence, leakage, near the public water supply) Also, cites to 40 CFR Section 122.4 and 122.5.

The Illinois EPA relies on the testing done by the liner manufacturer for liner properties. In its permit application for the coarse refuse embankment, which will form the southern berm of the slurry disposal cell, the applicant provided geotechnical studies that indicated the stresses caused by potential subsidence are within the tolerance range of a 60 mil HDPE liner, which was also used beneath that embankment. Further, the applicant has incorporated an appropriate Quality Assurance/Quality Compliance plan for liner installation and testing into their permit. Given these factors, if subsidence occurs, the subsidence is not expected to cause any leakage through the liner.

50. Discharge outfall 013 will release from the north sediment pond and there is a private water well in proximity to that location. Nearby property owners expressed their concerns at the NPDES public hearing held November 16, 2016, in Elkhart. Residents spoke about concerns for contamination of their private wells from mine pollution and concerns for risks to livestock and the area water table. These concerns must be addressed and seriously considered when deciding whether or not to approve this permit. We request that the Illinois EPA hold off on approving the permit in order to study the potential impacts the expansion of operations could have on private wells and other nearby water resources.

A groundwater monitoring well will be located on mine property between the north sediment pond and the private well. Should any leakage occur, the monitoring well will provide an early warning allowing corrective actions to be taken before contaminants can migrate off-site or reach the private well. All groundwater quality standards are set at concentrations protective of human health unless a concentration protective of livestock watering or irrigation is lower. The lower of the two concentrations is used as the Class I groundwater quality standard. All discharges through outfall 013 must meet applicable water quality standards, which are protective of aquatic life, including consumption by livestock.

51. Has IEPA reviewed the leak detection analysis from the mine regarding the proposed liner?

The Illinois EPA has reviewed the liner leak detection analysis submitted by the applicant for this liner installation and finds it acceptable.

52. How would the liner be repaired? What would be happened if the pumps were not operational?

During installation liners are tested and any areas failing the test are replaced. After waste disposal has begun, there is no practical means of liner repair, which is the reason that a groundwater monitoring system is always required even when liners are used. If the groundwater monitoring system indicates a leak has occurred, other remedial actions such as slurry walls or hydraulic control wells may be used to prevent further contaminant migration. With regard to pump failure, the mine uses recycled water from the disposal area for its mining operations, so non-operational pumps would be a temporary situation. All impoundments are required to have excess

capacity (free board) capable of accommodating large rain storms without pumping any water.

53. Does the CCR rule apply to the Viper Mine's proposed slurry impoundments?

No, the CCR rule specifically exempts coal mines.

54. What heavy metals are being accounted for in this permit? What about antimony, barium, mercury, nickel, thallium and zinc?

All of the metals listed in 35 Ill. Adm. Code Part 620.410, with the exception of Radium 226 and Radium 228 will be monitored in groundwater. A study conducted by the United States Geological Survey indicates that radium does not occur in coal waste at higher concentrations that ambient soil concentrations. The six metals listed are included in Part 620.410.

55. Has the Illinois EPA reviewed the citizen's samples taken from private and public wells?

The Illinois EPA has reviewed samples collected from the public well. See response to #42 for further explanation. No sample data collected from private wells has been provided to the Illinois EPA for review.

Acronyms and Initials

CCW	Coal Combustion Waste
CFR	Code of Federal Regulations
DMR	Discharge Monitoring Report
ICIS	Integrated Compliance Information System
IDNR	Illinois Department of Natural Resources
IEPA	Illinois Environmental Protection Agency
ILCS	Illinois Compiled Statutes
Ill. Adm. Code	Illinois Administrative Code
NPDES	National Pollutant Discharge Elimination System
OMM	Office of Mines and Minerals
pH	A Measure of Acidity or Alkalinity of a Solution
RDA	Refuse Disposal Area
SMCRA	Surface Mining Control and Reclamation Act of 1977 (federal)
TCLP	Toxicity Characteristic Leaching Procedure
USEPA	United States Environmental Protection Agency

DISTRIBUTION OF RESPONSIVENESS SUMMARY

An announcement, that the NPDES permit decision and accompanying responsiveness summary is available on the Illinois EPA website, was mailed or e-mailed to all who registered at the hearing and to all who sent in written comments. Printed copies of this responsiveness summary are available from Barb Lieberoff, 217-524-3038, e-mail: barb.lieberoff@illinois.gov.

WHO CAN ANSWER YOUR QUESTIONS

Illinois EPA NPDES Permit:

NPDES Permit	Dora Mashoff	618-993-7200
Legal questions	Stefanie Diers	217-782-5544
Water Quality Standards Unit	Scott Twait	217-782-0610
Groundwater Issues	Lynn Dunaway	217-524-7921
Public hearing of November 16, 2016	Dean Studer	217-558-8280

The public hearing notice, the Public Notice, the hearing transcript, the NPDES permit and the responsiveness summary are available on the Illinois EPA website (it may be necessary to paste the web address into the window of you internet browser and then enter “Viper Mine” in the search box):

http://www.epa.illinois.gov/public-notices/npdes-notices/index